

IN THE CLAIMS:

1. (Currently Amended) A data replacement output apparatus, comprising:

a receiving unit operable to receive a data stream including replacement object data and non-replacement-object data, the replacement object data being a constituent element of a data broadcast program and being replaceable with replacement data, the non-replacement object data being a constituent element of the data broadcast program and being not replaceable with replacement data; and

an output control unit operable to replace the replacement object data included in the data stream with the replacement data, and output the data stream after the replacement at a bit rate which is same as a bit rate at which the data stream was received, wherein

the data stream is transmitted by a carousel transmission method,

for receiving a data stream composed of replacement object data and non-replacement-object data, replacing the replacement object data with replacement data, and outputting the data stream containing the replacement data, wherein

each of the replacement object data, the non-replacement-object data, and the replacement data is composed of a plurality of units of data having the same size, and the data replacement output apparatus comprising:

the output control unit, when a reference time is defined as a time when a total number of units of data constituting the replacement data having been output becomes equal to a total number of units of data constituting the replacement object data having been received, makes a comparison between (i) a total number of units of data constituting the replacement object data that have been received during a time period from a newest reference time to a current time and (ii) a total number of units of data constituting the replacement data that have been output during

the time period, outputs the non-replacement-object data when (ii) the total number of units of data constituting the replacement object data is larger than (i) the total number of units of data constituting the replacement object data, and outputs the replacement data when (ii) the total number of units of data constituting the replacement data is no larger than (i) the total number of units of data constituting the replacement object data.

—— a determining unit operable to determine whether to perform a sequential output of a predetermined number of units of data constituting the replacement data, based on a result of comparison between (i) a total number of units of data constituting the replacement object data that have been received during a time period from a reference time to a current time and (ii) a total number of units of data constituting the replacement data that have been output during the time period, the determination being made each time a unit of data constituting the replacement object data is received while the sequential output of data is not performed; and

a data output unit operable to, if the determining unit determines to perform the sequential output of data, perform the sequential output of data by outputting a unit of data constituting the replacement data each time a unit of data constituting the data stream is received, operable to output a unit of data constituting the non-replacement-object data each time a unit of data constituting the non-replacement-object data is received while the sequential output of data is not performed, and operable to, if the determining unit determines not to perform the sequential output of data, output a unit of data constituting the non-replacement-object data each time a unit of data constituting the data stream is received.

2. (Currently Amended) The data replacement output apparatus of Claim 1, wherein

the output control ~~determining~~ unit includes:

a judging sub-unit operable to, each time a unit of data is received, judge whether the received unit of data constitutes the replacement object data; [[and]]

5 a comparing sub-unit operable to compare the total number of units of data constituting the replacement object data that have been received during the time period with the total number of units of data constituting the replacement data that have been output during the time period, and wherein

a data output sub-unit operable to output the replacement data ~~the determining unit determines to perform the sequential output of data~~ if it is found as a result of the comparison by the comparing sub-unit that the total number of units of data constituting the replacement data that have been output during the time period is no larger than the total number of units of data constituting the replacement object data that have been received during the time period.

3. (Currently Amended) The data replacement output apparatus of Claim 2, wherein

the [[data]] output control unit includes

a storage sub-unit operable to store the non-replacement-object data, and

the data output sub-unit reads the unit reads a unit of data constituting the non-
5 replacement-object data from the storage sub-unit and outputs the read non-replacement-object data when the total number of units of data constituting the replacement data that have been output during the time period is larger than the total number of units of data constituting the replacement object data that have been received during the time period.

~~unit of data each time a unit of data constituting the non-replacement-object data is received while the sequential output of data is not performed, and if the determining unit determines not to perform the sequential output of data, reads a unit of data constituting the non-~~

~~replacement object data from the storage sub-unit and outputs the read unit of data each time a unit of data constituting the data stream is received.~~

4. (Currently Amended) The data replacement output apparatus of Claim 1, wherein

the determining output control unit includes:

a judging sub-unit operable to, each time a unit of data is received, judge whether

5 the received unit of data constitutes the replacement object data;

a calculating sub-unit operable to calculate a replacement excess insufficiency count value by subtracting (i) the total number of units of data constituting the replacement data that have been output during the time period from (ii) the total number of units of data constituting the replacement object data that have been received during the time period; [[and]]

10 a count value judging sub-unit operable to, when (ii) the total number of units of data constituting the replacement data is no larger than (i) the total number of units of data constituting the replacement object data, judge whether the replacement excess insufficiency count value is smaller than the number of units of data constituting the replacement data; and ~~predetermined number as in the predetermined number of units of data constituting the~~
15 ~~replacement data that are output sequentially, and~~

~~the determining unit determines to perform the sequential output of data if a data~~
output sub-unit operable to output the replacement data when the count value judging sub-unit judges that the replacement excess insufficiency count value is no smaller than the number of units of data constituting the replacement data, ~~predetermined number.~~

5. (Currently Amended) The data replacement output apparatus of Claim 1, wherein

the determining output control unit includes:

a judging sub-unit operable to, each time a unit of data is received, judge whether

5 the received unit of data constitutes the replacement object data;

a calculating sub-unit operable to calculate a replacement ~~excess~~ insufficiency count value by subtracting (i) the total number of units of data constituting the replacement data that have been output during the time period from (ii) the total number of units of data constituting the replacement object data that have been received during the time period; [[and]]

10 a count value judging sub-unit operable to, when (ii) the total number of units of data constituting the replacement data is no larger than (i) the total number of units of data constituting the replacement object data, judge whether the replacement ~~excess~~ insufficiency count value is [[no]] smaller than half of the number of units of data constituting the replacement data; and ~~predetermined number as in the predetermined number of units of data constituting the~~
15 ~~replacement data that are output sequentially, and~~

~~the determining unit determines to perform the sequential output of data if a data~~
output sub-unit operable to output the replacement data when the count value judging sub-unit judges that the replacement ~~excess~~ insufficiency count value is no smaller than half of the number of units of data constituting the replacement data, predetermined number.

6. (Currently Amended) The data replacement output apparatus of Claim 1, wherein

the data stream includes a plurality of types of replacement object data,

the [[data]] output control unit includes

5 a replacement data storage sub-unit operable to store a plurality of types of replacement data that respectively correspond to the plurality of types of replacement object data, and

10 the output control unit (a) makes a comparison between each pair of (iii) a total number of units of data constituting one of the plurality of types of replacement object data that have been received during the time period and (iv) a total number of units of data constituting one of the plurality of types of replacement data, which corresponds to the type of replacement object data in (iii), that have been output during the time period, (b) outputs the non-replacement-object data when, with respect to all of the types of replacement data, (iv) the total number of units of data constituting one of the plurality of types of replacement data is larger
15 than (iii) the total number of units of data constituting corresponding one of the plurality of types of replacement object data, and (c) outputs the replacement data when, with respect to any of the types of replacement data (iv) the total number of units of data constituting one of the plurality of types of replacement data is no larger than (iii) the total number of units of data constituting corresponding one of the plurality of types of replacement object data.

20 ~~the determining unit determines whether to perform the sequential output of a predetermined number of units of data constituting any of the plurality of types of replacement data, based on a result of comparison between each pair of (i) a total number of units of data constituting one of the plurality of types of replacement object data that have been received during the time period and (ii) a total number of units of data constituting one of the plurality of~~
25 ~~types of replacement data, which corresponds to the type of replacement object data in (i), that have been output during the time period.~~

7. (Currently Amended) The data replacement output apparatus of Claim 6, wherein

the output control unit includes:

the determining unit calculates the a calculating sub-unit operable to calculate a

5 replacement excess count value for each pair of a type of replacement object data and a corresponding type of replacement data[[,]]; and

a data output sub-unit operable to, when [[if]] one or more replacement excess count values calculated by the determining calculating sub-unit are smaller than “0”, select the determining unit selects a type of replacement data among one or more types of replacement data
10 corresponding to the one or more replacement excess count values that are smaller than “0”, based on a predetermined criterion, and output the selected type of replacement data, determines to perform the sequential output of a predetermined number of units of data constituting the selected type of replacement data.

8. (Currently Amended) The data replacement output apparatus of Claim 7, wherein

the predetermined criterion is that a type of replacement data that corresponds to

the smallest value among the one or more replacement excess count values that are smaller than

5 “0”, should be selected.

the determining unit selects a type of replacement data that corresponds to the smallest value among the one or more replacement excess count values, and determines to perform the sequential output of a predetermined number of units of data constituting the selected type of replacement data.

9. (Currently Amended) The data replacement output apparatus of Claim 7, wherein

different priority levels are respectively assigned to the plurality of types of replacement data, and

the ~~determining unit selects~~ the predetermined criterion is that a type of
5 replacement data to which the highest priority level has been assigned among one or more types
of replacement data that correspond to the one or more replacement excess count values that are
smaller than "0", should be selected, ~~and determines to perform the sequential output of a~~
~~predetermined number of units of data constituting the selected type of replacement data.~~

10. (Currently Amended) The data replacement output apparatus of Claim 7, wherein

a type of replacement data is pre-selected from the plurality of types of replacement data, and

5 if a replacement excess count value for the pre-selected type of replacement data
is smaller than "0", the ~~determining unit~~ data output sub-unit selects the pre-selected type of
replacement data, and

if the replacement excess count value for the pre-selected type of replacement
data is no smaller than "0", the ~~determining unit~~ data output sub-unit selects a type of
10 replacement data that corresponds to the smallest value among the one or more replacement
excess count values, ~~and~~

~~determines to perform the sequential output of a predetermined number of units of~~
~~data constituting the selected type of replacement data.~~

11. (Currently Amended) The data replacement output apparatus of Claim 6, wherein
different priority levels are respectively assigned to the plurality of types of
replacement data and the non-replacement-object data,

the output control unit includes:

5 the determining unit calculates a calculating sub-unit operable to calculate the
replacement excess count value for each pair of a type of replacement object data and a
corresponding type of replacement data, and

a data output sub-unit operable to, if one or more replacement excess count values
calculated by the determining output control unit are smaller than “0”, and if any priority level
10 assigned to a type of replacement data corresponding to a replacement excess count value
smaller than “0” is no smaller than a priority level assigned to the non-replacement-object data,
output a type of replacement data which should be output. ~~the determining unit determines to~~
~~perform the sequential output of a predetermined number of units of data constituting any type of~~
~~replacement data corresponding to any of replacement excess count values smaller than “0”.~~

12. (Currently Amended) The data replacement output apparatus of Claim 1, wherein

the data stream includes a plurality of types of replacement object data,

the [[data]] output control unit includes

5 a post-replacement data storage sub-unit operable to store a plurality of types of
replacement data that respectively correspond to the plurality of types of replacement object data,
and

the output control unit makes a comparison between (iii) the determining unit
~~determines whether to perform the sequential output of a predetermined number of units of data~~

10 ~~constituting any of the plurality of types of replacement data, based on a result of comparison~~
~~between (i) a total number of units of data constituting the plurality of types of replacement~~
~~object data that have been received during the time period and [(ii)] (iv) a total number of units~~
~~of data constituting the plurality of types of replacement data that have been output during the~~
~~time period, outputs the non-replacement-object data when (iv) the total number of units of data~~
15 constituting the plurality of types of replacement data is larger than (iii) the total number of units
of data constituting the plurality of types of replacement object data that have been received
during the time period, and outputs one of the plurality of types of replacement data when (iv)
the total number of units of data constituting the plurality of types of replacement data is no
larger than (iii) the total number of units of data constituting the plurality of types of replacement
20 object data that have been received during the time period.

13. (Currently Amended) A data replacement output apparatus, comprising: ~~for~~
~~receiving a data stream composed of replacement object data and non-replacement object data,~~
~~replacing the replacement object data with replacement data, and outputting the data stream~~
5 ~~containing the replacement data, wherein~~

a receiving unit operable to receive a data stream including replacement object
data and non-replacement-object data, the replacement object data being a constituent element of
a data broadcast program and being replaceable with replacement data, the non-replacement
object data being a constituent element of the data broadcast program and being not replaceable
10 with replacement data; and

an output control unit operable to replace the replacement data included in the data stream with the replacement data, and output the data stream after the replacement at a bit rate which is same as a bit rate at which the data stream was received, wherein

the data stream is transmitted by a carousel transmission method,

15 each of the replacement object data, the non-replacement-object data, and the replacement data is composed of a plurality of units of data having the same size,

the data stream contains a sequence of M units of data constituting the replacement object data,

the replacement data is composed of replacement-purpose data, which is
20 constituted from N units of data and dummy data, where $M \geq N$, and

~~the data-replacement-output apparatus~~ output control unit comprising:

a replacement judging unit operable to judge whether a received unit of data belongs to the sequence of M units of data constituting the replacement object data or the non-replacement-object data; and

25 a data output unit operable to, if the replacement judging unit judges that the received unit of data belongs to the sequence of M units of data constituting the replacement object data, sequentially output N units of data constituting the replacement-purpose data and (M - N) units of data constituting the dummy data each time the sequence of M units of data is received, where $M \geq N$, and N is an integer no smaller than "1", and operable to, if the
30 replacement judging unit judges that the received unit of data belongs to the non-replacement-object data, output a unit of data constituting the non-replacement-object data each time a unit of data constituting the non-replacement-object data is received.

14. (Currently Amended) A data replacement output apparatus, comprising: for
receiving a data stream composed of replacement object data and non-replacement object data;
replacing the replacement object data with replacement data, and outputting the data stream
5 containing the replacement data, wherein

a receiving unit operable to receive a data stream including replacement object
data and non-replacement-object data, the replacement object data being a constituent element of
a data broadcast program and being replaceable with replacement data, the non-replacement
object data being a constituent element of the data broadcast program and being not replaceable
10 with replacement data; and

an output control unit operable to replace the replacement object data included in
the data stream with the replacement data, and output the data stream after the replacement at a
bit rate which is same as a bit rate at which the data was received, wherein

the data stream is transmitted by a carousel transmission method,

15 each of the replacement object data, the non-replacement-object data, and the
replacement data is composed of a plurality of units of data having the same size,

the data stream contains a sequence of a plurality of units of data constituting the
replacement object data,

the replacement data is composed of replacement-purpose data and dummy data,

20 the data replacement output apparatus output control unit comprising:

a replacement judging unit operable to judge whether a received unit of data
belongs to the sequence of the plurality of units of data constituting the replacement object data
or the non-replacement-object data;

a detecting unit operable to detect a number of units of data contained in the sequence that constitutes the replacement object data if the replacement judging unit judges that the received unit of data belongs to the sequence of the plurality of units of data constituting the replacement object data;

a judging unit operable to judge whether the number of units of data detected by the detecting unit is smaller than the number of units of data constituting the replacement-purpose data N, where N is an integer no smaller than "1"; and

a data output unit operable to, if the judging unit judges that the number of units of data detected by the detecting unit is smaller than the number of units of data constituting the replacement-purpose data [[N]], sequentially output as much units of data constituting the dummy data as the number of units of data detected by the detecting unit each time the sequence of the plurality of units of data is received, [[and]]

operable to, if the judging unit judges that the number of units of data detected by the detecting unit is no smaller than the number of units of data constituting the replacement-purpose data larger than N, sequentially output (i) N units of data constituting the replacement-purpose data and (ii) each time the sequence of the plurality of units of data is received, as much units of data constituting the dummy data as a difference between N and the number of units of data detected by the detecting unit each time the sequence of the plurality of units of data is received, and

operable to, if the replacement judging unit judges that the received unit of data belongs to the non-replacement-object data, output a unit of data constituting the non-replacement-object data each time a unit of data constituting the non-replacement-object data is received.

15. (Currently Amended) A data replacement output method for use in a data replacement output apparatus for receiving a data stream composed of replacement object data and non-replacement object data, replacing the replacement object data with replacement data, and outputting the data stream containing the replacement data, wherein each of the replacement
5 object data, the non-replacement object data, and the replacement data is composed of a plurality of units of data having the same size, the data replacement output method comprising:

a receiving step for receiving a data stream including replacement object data and non-replacement-object data, the replacement object data being a constituent element of a data broadcast program and being replaceable with replacement data, the non-replacement object data
10 being a constituent element of the data broadcast program and being not replaceable with replacement data; and

an output control step for replacing the replacement object data included in the data stream with the replacement data, and outputting the data stream after the replacement at a bit rate which is same as a bit rate at which the data stream was received, wherein

the data stream is transmitted by a carousel transmission method,
15 each of the replacement object data, the non-replacement-object data, and the replacement data is composed of a plurality of units of data having the same size, and

the output control step, when a reference time is defined as a time when a total number of units of data constituting the replacement data having been output becomes equal to a total
20 number of units of data constituting the replacement object data having been received, makes a comparison between (i) a total number of units of data constituting the replacement object data that have been received during a time period from a newest reference time to a current time and (ii) a total number of units of data constituting the replacement data that have been output during

the time period, outputs the non-replacement-object data when (ii) the total number of units of
25 data constituting the replacement data is larger than (i) the total number of units of data
constituting the replacement object data, and outputs the replacement data when (ii) the total
number of units of data constituting the replacement data is no larger than (i) the total number of
units of data constituting the replacement object data.

~~a determining step for determining whether to perform a sequential output of a~~
30 ~~predetermined number of units of data constituting the replacement data, based on a result of~~
~~comparison between (i) a total number of units of data constituting the replacement object data~~
~~that have been received during a time period from a reference time to a current time and (ii) a~~
~~total number of units of data constituting the replacement data that have been output during the~~
~~time period, the determination being made each time a unit of data constituting the replacement~~
35 ~~object data is received while the sequential output of data is not performed; and~~

~~—— a data output step for, if the determining step determines to perform the sequential~~
~~output of data, performing the sequential output of data by outputting a unit of data constituting~~
~~the replacement data each time a unit of data constituting the data stream is received, outputting~~
~~a unit of data constituting the non-replacement object data each time a unit of data constituting~~
40 ~~the non-replacement object data is received while the sequential output of data is not performed;~~
~~and if the determining step determines not to perform the sequential output of data, outputting a~~
~~unit of data constituting the non-replacement object data each time a unit of data constituting the~~
~~data stream is received.~~

16. (Cancelled)

17. (Currently Amended) A computer-readable recording medium recorded with a program for causing a data replacement output apparatus to perform a data replacement output process, recording therein a data replacement output control program for use in a data
5 replacement output apparatus for receiving a data stream composed of replacement object data and non-replacement object data, replacing the replacement object data with replacement data, and outputting the data stream containing the replacement data, wherein

the data replacement output process comprising:

a receiving step for receiving a data stream including replacement object data and non-
10 replacement-object data, the replacement object data being a constituent element of a data broadcast program and being replaceable with replacement data, the non-replacement object data being a constituent element of the data broadcast program and being not replaceable with replacement data; and

an output control step for replacing the replacement object data included in the data
15 stream with the replacement data, and outputting the data stream after the replacement at a bit rate which is same as a bit rate at which the data stream was received, wherein

the data stream is transmitted by a carousel transmission method,

each of the replacement object data, the non-replacement-object data, and the replacement data is composed of a plurality of units of data having the same size, and the data
20 replacement output control program comprising:

the output control step, when a reference time is defined as a time when a total number of units of data constituting the replacement data having been output becomes equal to a total number of units of data constituting the replacement object data having been received, makes a comparison between (i) a total number of units of data constituting the replacement object data

25 that have been received during a time period from a newest reference time to a current time and
(ii) a total number of units of data constituting the replacement data that have been output during
the time period, outputs the non-replacement-object data when(ii) the total number of units of
data constituting the replacement data is larger than (i) the total number of units of data
constituting the replacement object data, and outputs the replacement data when (ii) the total
30 number of units of data constituting the replacement data is no larger than (i) the total number of
units of data constituting the replacement object data.

~~a determining step for determining whether to perform a sequential output of a
predetermined number of units of data constituting the replacement data, based on a result of
comparison between (i) a total number of units of data constituting the replacement object data
35 that have been received during a time period from a reference time to a current time and (ii) a
total number of units of data constituting the replacement data that have been output during the
time period, the determination being made each time a unit of data constituting the replacement
object data is received while the sequential output of data is not performed; and~~

~~—— a data output step for, if the determining step determines to perform the sequential
40 output of data, performing the sequential output of data by outputting a unit of data constituting
the replacement data each time a unit of data constituting the data stream is received, outputting
a unit of data constituting the non-replacement object data each time a unit of data constituting
the non-replacement object data is received while the sequential output of data is not performed,
and if the determining step determines not to perform the sequential output of data, outputting a
45 unit of data constituting the non-replacement object data each time a unit of data constituting the
data stream is received.~~

18. (Currently Amended) A data replacement output method, comprising: for use in a
data replacement output apparatus for receiving a data stream composed of replacement object
data and non-replacement object data, replacing the replacement object data with replacement
5 data, and outputting the data stream containing the replacement data, wherein

a receiving step for receiving a data stream including replacement object data and non-
replacement object data, the replacement object data being a constituent element of a data
broadcast program and being replaceable with replacement data, the non-replacement object data
being a constituent element of the data broadcast program and being not replaceable with
10 replacement data; and

an output control step for replacing the replacement object data included in the data
stream with the replacement data, and outputting the data stream after the replacement at a bit
rate which is same as a bit rate at which the data stream was received, wherein

the data stream is transmitted by a carousel transmission method,

15 each of the replacement object data, the non-replacement-object data, and the
replacement data is composed of a plurality of units of data having the same size,

the data stream contains a sequence of M units of data constituting the replacement object
data,

the replacement data is composed of replacement-purpose data, which is constituted from

20 N units of data and dummy data, where $M \geq N$, and

the data replacement output method output control step comprising:

a replacement judging step for judging whether a received unit of data belongs to the
sequence of M units of data constituting the replacement object data or the non-replacement-
object data; and

25 a data output step for, if the replacement judging step judges that the received unit of data belongs to the sequence of M units of data constituting the replacement object data, sequentially outputting N units of data constituting the replacement-purpose data and (M - N) units of data constituting the dummy data each time the sequence of M units of data is received, where $M \geq N$, and N is an integer no smaller than "1", and if the replacement judging step judges that the
30 received unit of data belongs to the non-replacement-object data, outputting a unit of data constituting the non-replacement-object data each time a unit of data constituting the non-replacement-object data is received.

19. (Cancelled)

20. (Currently Amended) A computer-readable recording medium recorded with a program for causing a data replacement output apparatus to perform a data replacement output process, recording therein a data replacement output control program for use in a data
5 replacement output apparatus for receiving a data stream composed of replacement object data and non-replacement object data, replacing the replacement object data with replacement data, and outputting the data stream containing the replacement data, wherein

the data replacement output process comprising:

a receiving step for receiving a data stream including replacement object data and non-
10 replacement-object data, the replacement object data being a constituent element of a data broadcast program and being replaceable with replacement data, the non-replacement object data being a constituent element of the data broadcast program and being not replaceable with replacement data; and

an output control step for replacing the replacement object data included in the data stream with the replacement data, and outputting the data stream after the replacement at a bit rate which is same as a bit rate at which the data stream was received, wherein

the data stream is transmitted by a carousel transmission method,

each of the replacement object data, the non-replacement-object data, and the replacement data is composed of a plurality of units of data having the same size,

the data stream contains a sequence of M units of data constituting the replacement object data,

the replacement data is composed of replacement-purpose data, which is constituted from N units of data and dummy data, where $M \geq N$, and

~~the data-replacement output method~~ output control step comprising:

a replacement judging step for judging whether a received unit of data belongs to the sequence of M units of data constituting the replacement object data or the non-replacement-object data; and

a data output step for, if the replacement judging step judges that the received unit of data belongs to the sequence of M units of data constituting the replacement object data, sequentially outputting N units of data constituting the replacement-purpose data and (M - N) units of data constituting the dummy data each time the sequence of M units of data is received, where $M \geq N$, and N is an integer no smaller than "1", and if the replacement judging step judges that the received unit of data belongs to the non-replacement-object data, outputting a unit of data constituting the non-replacement-object data each time a unit of data constituting the non-replacement-object data is received.

21. (Currently Amended) A data replacement output method, comprising: for use in a
data replacement output apparatus for receiving a data stream composed of replacement object
data and non-replacement object data, replacing the replacement object data with replacement
5 data, and outputting the data stream containing the replacement data, wherein

a receiving step for receiving a data stream including replacement object data and non-
replacement-object data, the replacement object data being a constituent element of a data
broadcast program and being replaceable with replacement data, the non-replacement object data
being a constituent element of the data broadcast program and being not replaceable with
10 replacement data; and

an output control step for replacing the replacement object data included in the data
stream with the replacement data, and outputting the data stream after the replacement at a bit
rate which is same as a bit rate at which the data stream was received, wherein

the data stream is transmitted by a carousel transmission method,

15 each of the replacement object data, the non-replacement-object data, and the
replacement data is composed of a plurality of units of data having the same size,

the data stream contains a sequence of ~~a plurality of~~ M units of data constituting the
replacement object data,

the replacement data is composed of replacement-purpose data and dummy data,

20 the ~~data replacement output method~~ output control step comprising:

a replacement judging step for judging whether a received unit of data belongs to the
sequence of the plurality of units of data constituting the replacement object data or the non-
replacement-object data;

a detecting step for detecting a number of units of data contained in the sequence that
25 constitutes the replacement object data if the replacement judging step judges that the received
unit of data belongs to the sequence of the plurality of units of data constituting the replacement
object data;

a judging step for judging whether the number of units of data detected in the detecting
step is smaller than a number of units of data constituting the replacement-purpose data N, where
30 ~~N is an integer no smaller than "1"~~; and

a data output step for, if the judging step judges that the number of units of data detected
in the detecting step is smaller than the number of units of data constituting the replacement-
purpose data $[[N]]$, sequentially outputting as much units of data constituting the dummy data as
the number of units of data detected in the detecting step each time the sequence of the plurality
35 of units of data is received, and

if the judging step judges that the number of units of data detected in the detecting step is
no smaller than the number of units of data constituting the replacement-purpose data, larger than
N, sequentially outputting (i) ~~N units of data constituting~~ the replacement-purpose data and (ii)
~~each time the sequence of the plurality of units of data is received~~; as much units of data
40 constituting the dummy data as a difference between the number of units of data constituting the
replacement-purpose data $[[N]]$ and the number of units of data detected $[[in]]$ by the detecting
step, each time the sequence of the plurality of units of data is received, and

if the replacement judging step judges that the received unit of data belongs to the
non-replacement-object data, outputting a unit of data ~~constituting the non-replacement-object~~
45 ~~data~~ each time a unit of data ~~constituting the non-replacement-object data~~ is received.

22. (Cancelled)

23. (Currently Amended) A computer-readable recording medium recorded with a program for causing a data replacement output apparatus to perform a data replacement output process, recording therein a data replacement output control program for use in a data replacement output apparatus for receiving a data stream composed of replacement object data and non-replacement object data, replacing the replacement object data with replacement data, and outputting the data stream containing the replacement data, wherein

the data replacement output process comprising:

a receiving step for receiving a data stream including replacement object data and non-replacement object data, the replacement object data being a constituent element of a data broadcast program and being replaceable with replacement data, the non-replacement object data being a constituent element of the data broadcast program and being not replaceable with replacement data; and

an output control step for replacing the replacement object data included in the data stream with the replacement data, and outputting the data stream after the replacement at a bit rate which is same as a bit rate at which the data stream was received, wherein

the data stream is transmitted by a carousel transmission method,

each of the replacement object data, the non-replacement-object data, and the replacement data is composed of a plurality of units of data having the same size,

the data stream contains a sequence of a plurality of units of data constituting the replacement object data,

the replacement data is composed of replacement-purpose data and dummy data,

the ~~data-replacement-output-control-program~~ output control step comprising:

a replacement judging step for judging whether a received unit of data belongs to the
25 sequence of the plurality of units of data constituting the replacement object data or the non-
replacement-object data;

a detecting step for detecting a number of units of data contained in the sequence that
constitutes the replacement object data if the replacement judging step judges that the received
unit of data belongs to the sequence of the plurality of units of data constituting the replacement
30 object data;

a judging step for judging whether the number of units of data detected in the detecting
step is smaller than a number of units of data constituting the replacement-purpose data N, where
~~N is an integer no smaller than "1"~~; and

a data output step for, if the judging unit judges that the number of units of data detected
35 in the detecting step is smaller than the number of units of data constituting the replacement-
purpose data $[[N]]$, sequentially outputting as much units of data constituting the dummy data as
the number of units of data detected in the detecting step each time the sequence of the plurality
of units of data is received, and

if the judging step judges that the number of units of data detected in the detecting step is
40 no smaller than the number of units of data constituting the replacement-purpose data ~~larger than~~
 N , sequentially outputting (i) ~~N-units of data constituting~~ the replacement-purpose data and (ii)
~~each time the sequence of the plurality of units of data is received~~, as much units of data
constituting the dummy data as a difference between $[[N]]$ the number of units of data
constituting the replacement-purpose data and the number of units of data detected $[[in]]$ by the
45 detecting step, each time the sequence of the plurality of units of data is received, and

if the replacement judging step judges that the received unit of data belongs to the non-replacement-object data, outputting a unit of data ~~constituting the non-replacement-object data~~ each time a unit of data ~~constituting the non-replacement-object data~~ is received.